

**REMARKS**

Claims 1-45 were pending in the present application, claims 1-7, 14, 15, 30-34, 37, 38 and 40-43 were under examination, and claims 8-13, 16, 29, 35, 36, 39, 44 and 45 stood withdrawn. In this paper, claims 1, 2, 4 and 5 are amended and claims 3 and 6-45 are cancelled without prejudice to Applicants' right to pursue the cancelled subject matter in one or more related divisional, continuation, and/or continuation-in-part applications. Thus, following entry of the present amendment, claims 1, 2, 4 and 5 are pending and under consideration.

**I. AMENDMENTS TO THE DRAWINGS**

In the Office Action, the PTO objected to Figures 5B and 5C for omitting labels designating "Normal" and "Tumor" above the middle column of graphs for Her1-Her2 dimers. In response to the Examiner's objection, Applicants respectfully submit herewith amended Drawings containing Figures 5B and 5C labeled with "Normal" and "Tumor" above the middle column as requested. These amended Drawings are provided in the Replacement Sheets found in the Appendix to this response. Applicants respectfully submit that the amended Drawings contain no new matter. As such, Applicants respectfully request that the objection to the Drawings be withdrawn.

**II. AMENDMENTS TO THE SPECIFICATION**

The PTO further objected to Figures 10A-10C for omitting a legend, or not providing an explanation in the "Brief Description of the Drawings" explaining the symbols or data points depicted in these Figures. In response to Examiner's objection, Applicants have amended the specification to explain the data points in the graphs and to identify the heterodimers depicted in each of the panels. Applicants respectfully submit that no new matter is added by way of these amendments, and their entry is respectfully requested under 37 C.F.R. § 1.111.

**III. THE AMENDMENTS TO THE CLAIMS**

The present paper presents amendments to Claims 1, 2, 4 and 5. The amendments to the Claims are fully supported by the application as filed and therefore introduce no new matter.

In particular, support for the amendment to Claim 1 may be found in the specification, for example, from line 29 of page 58 to line 10 of page 59, and Claim 1 as originally filed. Support for the amendment to claim 2 may be found, for example, in claim 2 as originally filed. Claim 4 has been amended to depend from claim 1. Claims 4 and 5 have been amended to distinctly claim that which the Applicants have always regarded as their invention. No new matter has been introduced by the amendments, and their entry is respectfully requested under 37 C.F.R. § 1.111. Upon entry of the present amendments, claims 1, 2, 4 and 5 are pending in this application.

**IV. CLAIM REJECTIONS UNDER 35 U.S.C § 112, SECOND PARAGRAPH**

Claims 1-7, 14, 15, 30-34, 37, 38 and 40-43 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being incomplete for omitting essential steps, such omission amounting to a gap between the steps. In particular, the PTO argues that a correlation step is omitted which describes how the results of the assay relate back to determining the disease status of a patient.

Without acquiescing to the propriety of the rejection, Applicants believe the rejection is moot in view of the amendment to Claim 1, and the cancellation of Claims 3 and 6-45. Claim 1 now recites a correlation step wherein an increase in the amount of Her1-Her2 complexes or Her2-Her3 complexes, or both, indicates the presence of breast cancer in a patient. Further, Claims 2 and 4 have been amended to depend from independent Claim 1. Accordingly, Applicants respectfully submit that the rejection of Claims 1-7, 14, 15, 30-34, 37, 38 and 40-43 for omitting essential steps under 35 U.S.C. § 112, second paragraph is moot and respectfully request its withdrawal.

Claims 4-7 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, the PTO argues that the phrase “having a cleavage-inducing moiety with an effective proximity” as recited in Claim 4 is unclear with respect to that which “effective proximity” relates to. Applicants respectfully direct the PTO to page 36, lines 3-6 of the specification as originally filed, wherein “effective proximity” is defined as “the range within which a cleavage-inducing moiety can effectively cleave a cleavable linkage (that is, cleave enough molecular tag to generate a detectable signal).” Further support for the definition of “effective proximity” may be found from line 33 of page 35 to line 3 of page 36 of the specification as originally filed. Based on this

disclosure, Applicants submit that one of ordinary skill in the art could interpret the metes and bounds of Claim 4, and therefore the statutory requirements of 35 U.S.C. § 112, second paragraph are satisfied. Applicants therefore respectfully request the withdrawal of the rejection of claims 4-7 as indefinite under 35 U.S.C. § 112, second paragraph.

**V. CLAIM REJECTIONS UNDER 35 U.S.C § 112, FIRST PARAGRAPH**

Claims 1, 2, 30-33, 37, 38 and 40-43 stand rejected under 35 U.S.C. § 112, first paragraph. In particular, the PTO asserts that the one cannot extrapolate the teaching of the specification to the scope of the claims because the specification does not provide examples or guidance for determining the disease status of a patient other than for diagnosing the presence of breast cancer by detecting increased amounts of Her1-Her2 or Her2-Her3 heterodimers in patient breast cancer samples.

Without acquiescing to the propriety of the rejection, Applicants believe the rejection is moot in view of the amendment to Claim 1, and the cancellation of Claims 3 and 6-45. Accordingly, Applicants respectfully request the withdrawal of the rejection of Claims 1, 2, 30-33, 37, 38 and 40-43 under 35 U.S.C. § 112, first paragraph.

Claims 3-7, 14, 15 and 34 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. In particular, the PTO alleges that the claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains to make or use the invention.

Without acquiescing to the propriety of the rejection, Applicants believe this rejection is also moot in view of the amendment to Claim 1, and the cancellation of Claims 3 and 6-45. Thus, Applicants respectfully request withdrawal of the rejection of Claims 3-7, 14, 15 and 34 under 35 U.S.C. § 112, first paragraph.

**VI. DOUBLE PATENTING**

Claim 37 stands objected to under 37 CFR 1.75 as being a substantial duplicate of claim 33. Without acquiescing to the propriety of this objection, Applicants have canceled Claim 37, rendering the objection of this claim moot. Applicants therefore respectfully request that the objection of Claim 37 under 37 CFR 1.75 be withdrawn.

Claims 1-7, 14, 15, 30-34, 37, 38, and 40-43 stand provisionally rejected under the judicially-created doctrine of obviousness-type double patenting over Claims 1-7 of co-pending Application No. 10/813,412 (“the ’412 application”). Applicants believe that this

rejection is the last remaining issue before passage of Claims 1, 2, 4 and 5 to issuance. Without acquiescing to the propriety of the rejection, Applicants respectfully request that Claims 1, 2, 4 and 5 be allowed to issue, and that any potential double patenting objection be considered in connection with the '412 application. *See M.P.E.P. § 804 I.B.*

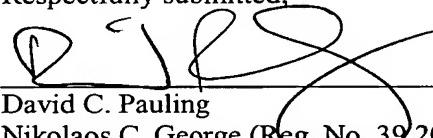
**CONCLUSION**

In view of the foregoing, Applicants respectfully submit that the present application is in condition for allowance and earnestly request an early indication of the same.

No fee is believed due with this response other than the fee for the extension of time for response. However, should the Commissioner determine otherwise, the Commissioner is hereby authorized to charge any required fee(s) to Jones Day Deposit Account No. 50-3013 (Order No. 949677-999132). A copy of this sheet is enclosed for such purpose.

Respectfully submitted,

Date: January 10, 2007

  
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